

California's Bay-Delta



The Problem, The Process and The Potential





Spring 1998

Dear Reader:

Government alone cannot solve the problems facing the Bay-Delta. Active participation and understanding of the issues by all the Bay-Delta interests and the public is the key to success. Already, thousands of Californians have contributed to the CALFED Bay-Delta Program. By volunteering time, sharing expertise, expressing an idea and/or casting a vote in support of Prop 204, all have helped shape the solutions being studied today. With the release of the draft programmatic EIS/EIR, each of us has an unprecedented opportunity to get involved in solving the water management and environmental problems of the Bay-Delta.

California's future depends on it!

Sincerely,

Lester A. Snow
Executive Director

**Please fill out
the comment
form in the back
of this booklet
and tell us what
is important
to you.**

Commonly Asked Questions

What does "Programmatic EIS/EIR" mean?

Due to the size and complexity of the Bay-Delta system — covering nearly the entire state of California — and the conceptual nature of the proposed actions, CALFED is first evaluating impacts and benefits on a very broad or "programmatic" scale. The analysis presented in the programmatic EIS/EIR provides information to decision makers and the public on the range of possible environmental consequences associated with each of the Program alternatives. Site-specific, detailed environmental impact analysis will take place on each action contained in the final Bay-Delta solution once the broad-based plan is approved, but prior to implementation. Since the CALFED Bay-Delta Program consists of both state and federal agencies, its plan must meet the requirements for identifying potential impacts contained in both the state's California Environmental Quality Act (EIR) and the federal National Environmental Protection Act (EIS). Implementation of the solution is expected to take 25 to 30 years.

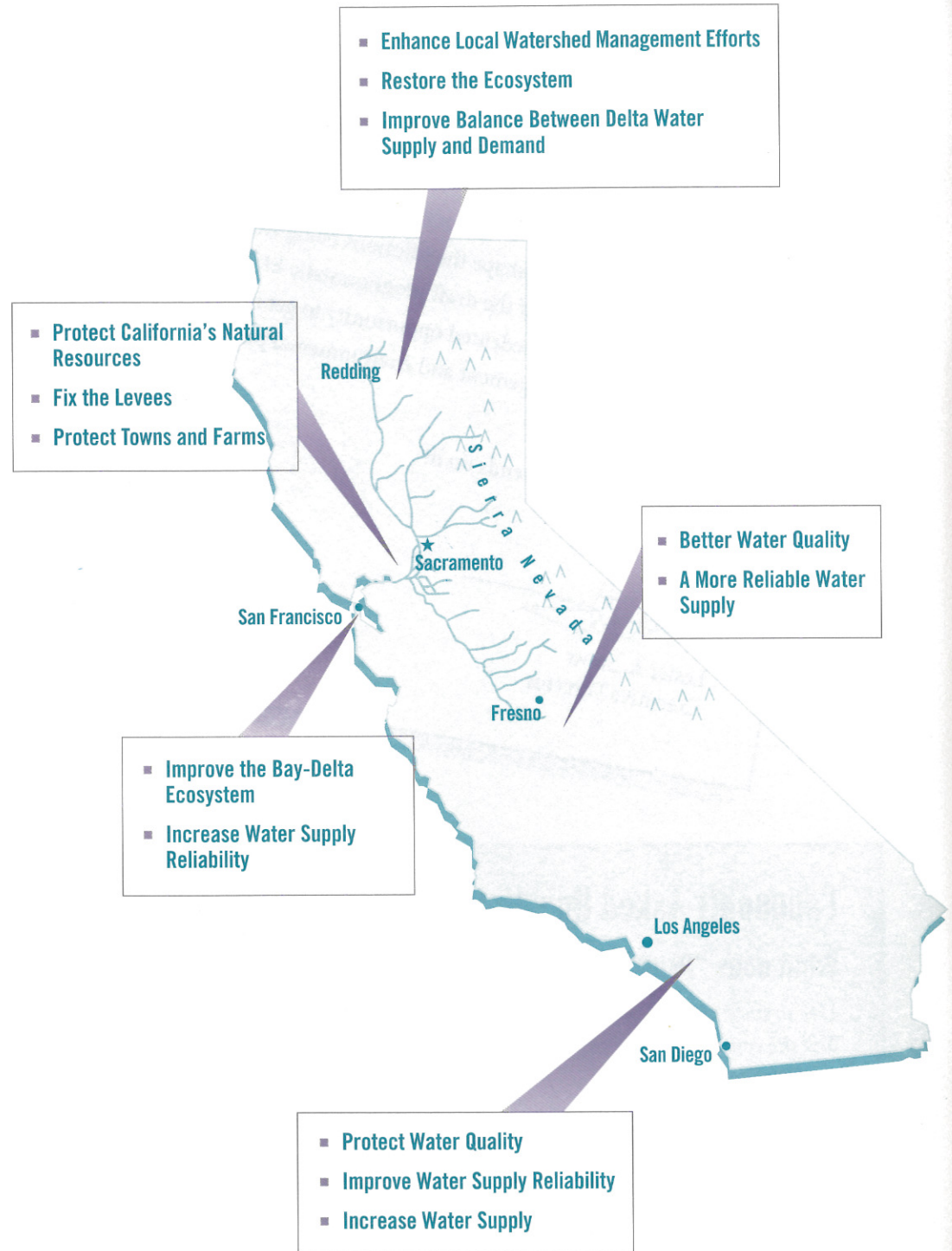


Bay-Delta Facts at a Glance

- A drinking water supply for more than 22 million Californians.
- Supplies irrigation water for more than four million acres of the world's most productive farmland, which produce 45 percent of the nation's fruits and vegetables.
- The largest wetland habitat and largest estuary in the West. It supports 750 plant and animal species; some found nowhere else on the planet.
- Home to one of the nation's most productive salmon fisheries, as well as a significant recreational fishing area.
- A critical part of the Pacific Flyway over which hundreds of migrating birds travel each year.
- Ultimately, the vitality of California's economy, the world's 7th largest, depends on the health of the Bay-Delta system to ensure the reliability of current and future water supplies while enhancing the Bay-Delta's unique environment.

You Depend on the Bay-Delta

The state's economic and ecological future will be strengthened by solving the critical water management and environmental problems associated with the Bay-Delta system.



The Problem

The Bay-Delta system has for decades been the focus of competing interests — economic, environmental, urban and agricultural. Disagreements among these interests have included how much water to take from the system and when, protecting endangered species, maintaining water quality and protecting those who live and work in the Delta itself. With little agreement and a lot of gridlock, over the years the Bay-Delta system has declined. Today the Bay-Delta system is in serious trouble.



- Habitats are declining, and some native species are listed as endangered.
- The system has suffered from impaired water quality.
- Water supply reliability has declined significantly.
- Many levees are structurally weak and present a high risk of failure.

Reasons To Care

- The Bay-Delta is the largest estuary on the west coasts of North and South America, home to plants and animals found nowhere else on the planet.
- More than 22 million Californians rely on the Bay-Delta system for all or some of their drinking water.
- There is concern that Delta levees are vulnerable to failure, especially during earthquakes or periods of high runoff. Such a failure could flood farmland and wildlife habitat, and could contaminate the fresh water supply and result in a long interruption of water deliveries for both urban and agricultural users.
- Millions of birds migrate through and live in the Bay-Delta, as do more than 53 species of fish, including one of the most productive natural salmon fisheries on the west coast.
- Key California industries from agriculture to hi-tech require a plentiful supply of quality water to prosper. Also, attracting new businesses to the state requires water supply reliability.
- The Bay-Delta system is a key component of the state's \$24 billion agricultural industry, supplying irrigation water to millions of acres of the world's most productive farmland.
- The Bay-Delta supports one of the richest commercial fisheries in the nation.
- In addition to the State Water Project and the federal Central Valley Project, California's two largest water distribution systems, at least 7,000 other permitted water diverters, some large and some small, have developed water supplies from the watershed feeding the Bay-Delta estuary.

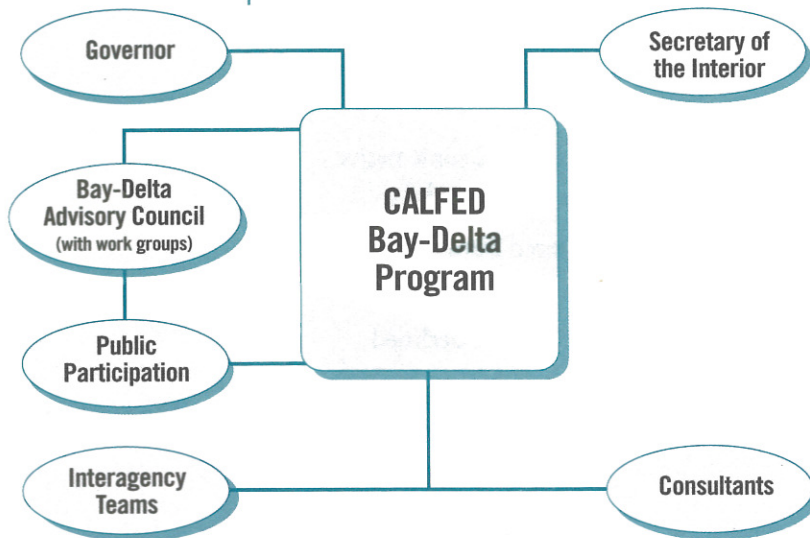


With little agreement and a lot of gridlock, over the years the Bay-Delta system has declined. Today the Bay-Delta system is in serious trouble.



What Is CALFED?

The CALFED Bay-Delta Program, initiated in 1995 by Governor Pete Wilson and the Clinton Administration, is an unprecedented collaboration among state and federal



agencies and the state's leading urban, agricultural and environmental interests to address and resolve the environmental and water management problems associated with the Bay-Delta system. CALFED consist of the decision makers of these agencies as well as technical staff. A federally chartered advisory group consists of leaders of stakeholder groups throughout the state. The mission of the CALFED Bay-Delta Program is to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system.

A New Approach

In the past, most efforts to improve water supply reliability or water quality, improve ecosystem health, or maintain and improve Delta levees were single-purpose projects. While pursuing a single purpose can keep the scope of a project manageable, it can ultimately make the project more difficult to implement, given the inter-relationships of the problems affecting the Bay-Delta system. CALFED takes a different approach, realizing that problems in one resource area cannot be solved effectively without addressing problems in all four areas at once. This greatly increases the scope of CALFED's efforts but will ultimately enable the Program to make progress toward a lasting solution.

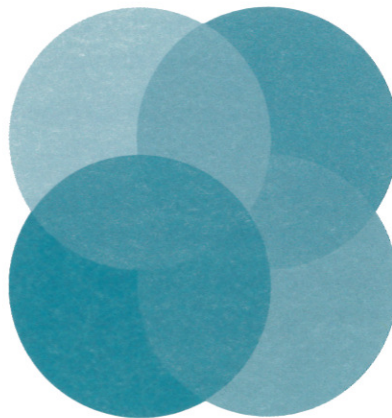
**Public involvement
is an integral part
of the Program's
structure.**

**Ecosystem
Restoration**

**Water
Supply
Reliability**

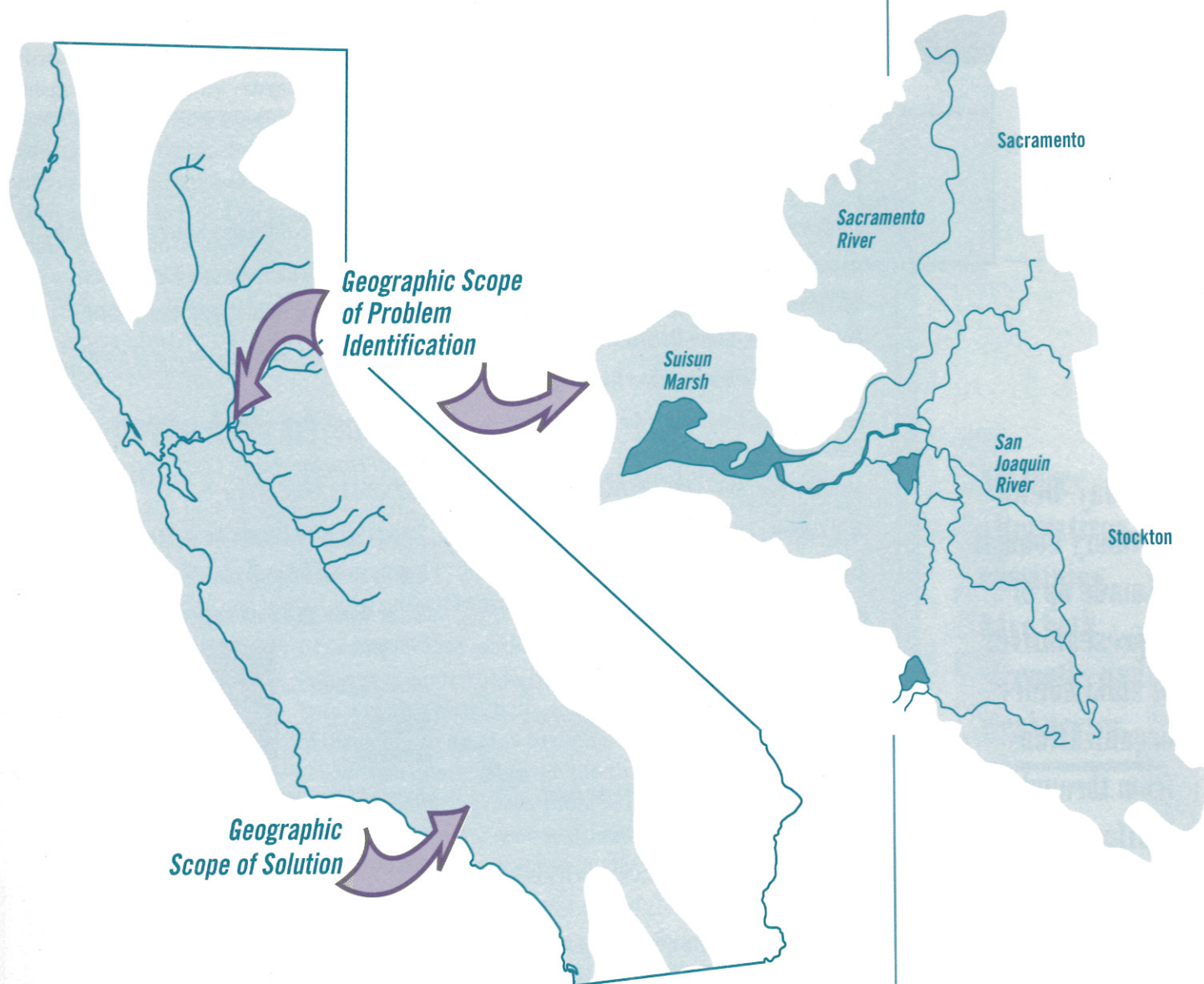
**Water
Quality**

**Levee
System
Integrity**



CALFED Problem and Solution Areas

Although the majority of the problems of the Bay-Delta system consist of the legally defined Delta, Suisun Bay (extending to Carquinez Strait) and Suisun Marsh, the geographic scope for developing possible solutions includes a much broader area that extends upstream and downstream of the Bay-Delta. This solution area includes the Central Valley watershed, the Southern California water system service area, San Pablo Bay, San Francisco Bay, and near-shore portions of the Pacific Ocean out to the Farallon Islands and north to the Oregon border.



Collaboration, Cooperation, Consensus



Public participation is an essential part of the Program and comes through a variety of channels, including the federally chartered Bay-Delta Advisory Council made up of representatives of stakeholder organizations from throughout California who meet regularly to offer advice to CALFED staff. The Ecosystem Roundtable, a subcommittee of BDAC, provides specific input on coordination of CALFED ecosystem restoration projects. The public is also involved through a number of other forums, including public meetings and hearings, technical working groups, issues workshops, a website, 24-hour public information telephone line, media outreach and small group presentations.

**The Bay-Delta
Advisory Council
is made up of
representatives
of stakeholder
organizations
from throughout
California.**

Bay-Delta Advisory Council

Tib Belza, Northern California Water Association

Roberta Borgonovo, League of Women Voters of California

Don Bransford, Glenn-Colusa Irrigation District

Byron Buck, California Urban Water Agencies

Ezunial Burts, Los Angeles Area Chamber of Commerce

Martha Davis, Sierra Nevada Alliance

Tom Decker, California Chamber of Commerce

Hap Dunning, The Bay Institute

Jack Foley, Metropolitan Water District of Southern California

Roger Fontes, Northern California Power Agency

Howard Frick, Friant Water Authority/Arvin Edison Water Supply District

Tom Graff, Environmental Defense Fund

David Guy, California Farm Bureau Federation

Steve Hall, Association of California Water Agencies

Eric Hasseltine, Contra Costa Council

Alex Hildebrand, South Delta Water Agency

Richard Izmirian, California Sportfishing Protection Alliance

Rosemary Kamei, Santa Clara Valley Water District

Mike Madigan, California Water Commission*

Pat McCarty, Delta Protection Commission

*Sunne Wright McPeak**, Bay Area Council*

Robert Meacher, Regional Council of Rural Counties

Ann Notthoff, Natural Resources Defense Council

Pietro Parravano, Pacific Coast Federation of Fishermen's Associations

Stuart Pyle, Kern County Water Agency

Bob Raab, Save San Francisco Bay Association

Judith Redmond, Community Alliance with Family Farmers

Marcia Sablan, City of Firebaugh

Mike Stearns, San Luis Delta Mendota Water Authority

Roger Strelow, Dames and Moore

Roger Thomas, Golden Gate Fishermen's Association

Jim Branham, Designated State Official - The Resources Agency

Patrick Wright, Designated Federal Official - United States Environmental Protection Agency

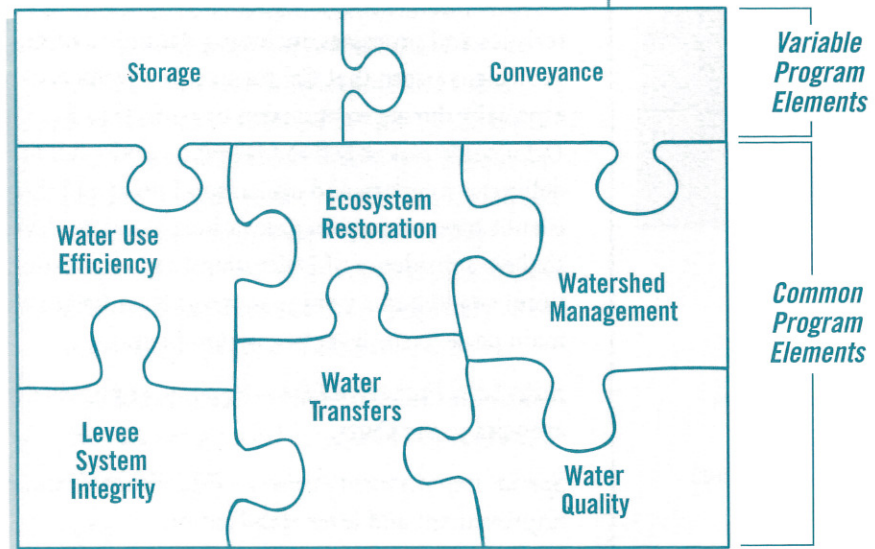
**Chair*

***Vice Chair*

(As of January 1998)

Potential Solutions

The alternatives for a Bay-Delta solution are made up of building blocks referred to as Program elements. During the initial stages of the CALFED Program it was determined that some actions were so fundamental to the system's recovery that they should be included in whichever solution was ultimately chosen. These "Common Program" elements include levee system integrity, water quality, ecosystem restoration and water use efficiency. During Phase II of the Program, two additional Common Program elements evolved based on public input and technical analysis. These are watershed management and water transfers. The final two building blocks that form each potential solution are storage and conveyance (the way water is moved through the Bay-Delta system). These elements vary from alternative to alternative.



No Preferred Alternative

The CALFED draft programmatic EIS/EIR does not identify a preferred alternative. All three alternatives were evaluated by technical staff and public working committees against such criteria as benefits to water quality, impact on fish and wildlife, total cost and operational flexibility. This technical information is then considered in the context of assurances, financing and overall ability to implement.



Choosing the best solution to the problems of the Bay-Delta system is not purely a technical decision. All three alternatives remaining have both strengths and weaknesses. It is up to the public to decide what issues are most important to California's future. Through meetings of the Bay-Delta Advisory Council, presentations to interested groups, public hearings and workshops and other outreach, CALFED is looking for input on these alternatives.

The final programmatic EIS/EIR, which is expected to be released in fall 1998, will identify a preferred alternative, based on both the technical analysis and public input.

All three alternatives remaining have both strengths and weaknesses.

Common Program Elements

Common Program elements are included in all three alternatives and represent a significant investment in the Bay-Delta system.

Long-Term Levee Protection Plan

Delta levees are the most visible man-made feature of the Bay-Delta system. They are an integral part of the Delta landscape and are key to preserving the Delta's physical characteristics and processes, including definition of the Delta waterways and islands. There is growing concern that California's Bay-Delta system levees are vulnerable to failure, especially during earthquakes or periods of high runoff. A significant levee failure in the Delta could not only flood farmland and wildlife habitat, but also interrupt water supply deliveries to urban and agricultural users and disrupt highway and rail use. Most Delta islands have land surface elevations below sea level. Natural settling of the levees and shallow subsidence of Delta island soils (oxidation which lowers the level of the land over time) resulted in a need to increase levee heights to maintain protection. There are five main parts to the levee protection plan:

Base-Level Protection Plan – Provides equitably distributed funding to participating local agencies in the Delta.

Special Improvement Projects – Establishes a funding mechanism for special habitat improvement and levee stabilization projects to augment the base level funding. Special improvement project funding is based on the benefit to the public, not the need for improvement.

Delta Island Subsidence Control Plan – Focuses on reducing the risk to levee stability from subsidence by funding grant projects to develop best management practices.

Emergency Management Plan – Builds upon existing state, federal and local agency emergency management programs to improve protection of Delta resources in the event of a disaster.

Seismic Risk Assessment – Evaluates the potential performance of the existing levee system during seismic events.



Commonly Asked Questions

What would happen if the levees were allowed to fail?

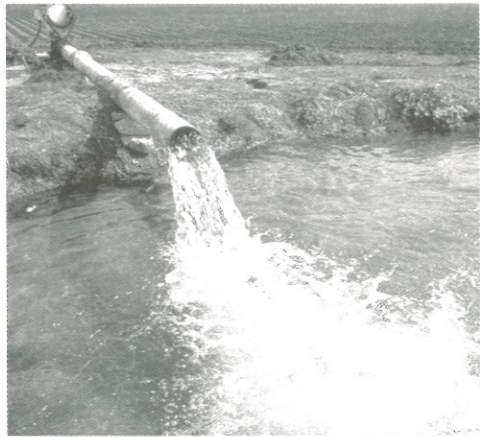
Some say levees should be removed to allow the Delta to return to its "natural state." In addition to the thousands of homes, farms and businesses that would be lost in the Delta if this were to happen, consequences to water quality would be devastating and the system would cease to be a water source for two-thirds of the state.

How This Will Help

- Provides funding for continued maintenance of levees to protect Delta functions.
- Ensures suitable funding, equipment and materials availability, and coordination to rapidly respond to levee failures.
- Subsidence reduction helps long-term Delta system integrity.
- Increases reliability for water supply needs from the Delta and in-Delta water quality.
- Increases reliability for in-Delta land use.
- Increases reliability for in-Delta aquatic and wildlife habitat.

Water Quality Program

Good water quality is critically important for drinking water supplies, industry, recreation, agriculture, irrigation, and to support aquatic and wetlands habitat. Unfortunately, there are problems with water quality in the Bay-Delta. Runoff from harvested forests, farms,



mines, residential landscaping and urban streets, all contribute to the Bay-Delta water quality problem, as do discharges of municipal and industrial wastewater. Also, high salt concentrations in waters from the Bay impact the use of Delta water for agriculture and drinking water, and can negatively affect the delicate balance of the ecosystem.

The Water Quality Program element includes the following broad categories of programmatic actions:

- Mine Drainage
- Urban and Industrial Runoff
- Wastewater and Industrial Discharge
- Agricultural Drainage and Runoff
- Water Treatment
- Water Management
- Human Health
- Toxicity of Unknown Origin

While the Water Quality Program remains relatively unchanged among the alternatives, its performance can vary significantly depending on the other Program elements. Storage can help timing for the release of pollutants remaining after source control efforts. Improved conveyance south to Delta export pumps will improve water quality for those diversions but may decrease water quality for in-Delta diversions.

How This Will Help

- Improves Delta water quality by reducing volume of urban, industrial and agricultural runoff/drainage and concentration of pollutants entering the Delta.
- Improves water quality for the ecosystem by reducing toxicants as a limiting factor.
- Improves protection of Delta drinking water supplies.
- Reduces concentration of compounds contributing to trihalomethane formation potential and degradation of drinking water supplies.



Improved conveyance south to Delta export pumps will improve water quality for those diversions but may decrease water quality for in-Delta diversions.

Common Program Elements

Ecosystem Restoration Program

The California Bay-Delta ecosystem continues to deteriorate. It no longer provides the habitat necessary to enable native fish, wildlife and plants to flourish. The Bay-Delta system is home to plants and animals found nowhere else on the planet. Millions of birds migrate through and live in the Bay-Delta, as do more than 53 species of fish, including one of the most productive natural salmon fisheries on the west coast. However, since the early 1800s, 700,000 acres of land naturally serving as water overflow areas and seasonal habitat have been converted to agricultural and urban uses. Other practices such as hydraulic mining and modern water project operations have also contributed to habitat loss and decline. Without ecosystem restoration, native and valuable plant and animal populations will continue to be at risk.



This Common Program contains the following types of actions:

- Restore, protect and manage important habitat types.
- Restore critical instream flows and Delta outflow in key springtime periods.
- Develop floodways along the lower Cosumnes and San Joaquin rivers.
- Construct setback levees to increase floodplain interactions and provide seasonal aquatic and riparian habitats.
- Develop prevention and control programs for invasive species.
- Protect sediment sources that feed streams and rivers in the Bay-Delta system.
- Support local watershed planning and management programs.

Commonly Asked Questions

How much will implementation of the ERPP cost?

Full implementation of the ERPP is estimated at approximately \$1.5 billion for the expected 25-year life of the program. Implementation will be paid for by a variety of public and private sources, including the funding contained in 1996's Proposition 204, a federal cost-share agreement, stakeholders who signed the 1994 Bay-Delta Accord and other funding sources.

How will local environmental, regulatory and governmental bodies be involved?

The concept behind the actions and potential actions in CALFED's Ecosystem Restoration Program is that implementation be handled on the local level through partnership arrangements. This is already being done through the state and federal funding of more than 50 restoration projects proposed by a wide variety of organizations and agencies. Many stakeholders were also involved in the development of the ERPP by submitting comments on earlier drafts, attending public meetings and participating in technical work groups. The release of CALFED's draft Programmatic Environmental Impact Report/Environmental Impact Statement is an opportunity for significant input from these entities as well.

- Install state-of-the-art fish screens.
- Implement or expand fish marking programs at hatcheries and fish production facilities in the Bay-Delta system.
- Modify barriers that temporarily impair fish passage.
- Evaluate and reduce adverse effects on contaminants.
- Implement a strong ecosystem monitoring program to evaluate short- and long- term trends in ecosystem health.
- Implement a well-funded research program to provide information needed for future solutions and decisions.



How This Will Help

- Reverses decline in ecosystem health.
- Supports a healthy Bay-Delta ecosystem.
- Supports sustainable production and survival of plant and wildlife species.
- Reduces the conflict between fisheries and water supply opportunities.
- Will recover endangered species.

Water Use Efficiency Program



As overall water use has increased over the past several decades, so has competition among the different water uses. In addition, water flow and timing requirements established to protect certain fish and wildlife species that depend on freshwater flows have at times impacted the Delta's ability to meet water supply demands. As a result, the question of water availability has

created economic uncertainty in water service areas and conflict over available supplies.

The CALFED Water Use Efficiency Program builds upon the fact that implementation of efficiency measures occurs mostly at the local and regional levels.

Conservation related actions include:

- Work with California Urban Conservation Council and the Agricultural Water Management Council to identify appropriate conservation measures.
- Expand state and federal programs to provide sharply increased levels of planning, technical and financial assistance and develop new ways of providing assistance in the most effective manner.
- Help urban water suppliers comply with the Urban Water Management Planning Act.
- Help water suppliers and water users identify and implement water management measures that can yield multiple benefits.
- Identify and implement practices to improve water management of wildlife refuges.



Common Program Elements

**The CALFED
Water Use
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Water recycling actions include:

- Help urban water agencies comply with the water recycling provisions in the Urban Water Management Planning Act.
- Expand state and federal recycling programs in order to provide sharply increased levels of planning, technical and financial assistance, and develop new ways of providing assistance in the most effective manner.
- Provide regional planning assistance that can increase opportunities for use of recycled water.

How This Will Help

- Reduces demand for Delta exports and reduces related entrainment effects on fisheries.
- Helps make existing supplies available for future unmet water demands as populations continue to expand.
- Can help in timing of diversions for reduced entrainment effects on fisheries.
- Could make water available for transfers and for environmental flows.
- May improve overall Delta and tributary water quality.
- Could reduce the total salt load in the San Joaquin Valley.

Water Transfers

The California Bay-Delta system provides water for drinking, industry, recreation, agriculture, irrigation, and to support aquatic and wetlands habitat. The CALFED Bay-Delta Program has identified a number of problems affecting the Bay-Delta system, including ecosystem quality, water quality and water supply reliability. The problems result in part from an imbalance in water supply and demands. CALFED recognizes that water transfers are an important part of water management in California and can be valuable in the effort to improve water supply reliability, water use efficiency and the aquatic ecosystem.

The CALFED Water Transfer Element will address the policy issues that arise when water is transferred from one area of the state to another, such as third party impacts and groundwater resources protection. It will also address operational issues associated with water transfers such as carriage water, reservoir refill criteria, accounting for environmental water transfers and wheeling of water. The CALFED approach to water transfers is to encourage the development of standard guidelines based on those presented in Governor Pete Wilson's 1992 water policy address.

- Water transfers must be voluntary. Water rights of sellers must not be impaired.
- Water transfers must not harm fish and wildlife or their habitats.
- There needs to be assurances that water transfers will not cause overdraft or degradation of groundwater basins.
- Entities receiving transferred water should be required to show they are already making efficient use of existing water supplies.



- Water districts and agencies that hold water rights or contracts to transferred water must have a strong role in determining what is done. The impact on the fiscal integrity of the districts and on the economy of small agricultural communities cannot be ignored.

How This Will Help

- Improves the economic efficiency of water use.
- Provides an incentive for water users to implement cost-effective conservation measures.
- Helps ensure realistic evaluation of the cost-effectiveness of any new supply development, helping to avoid premature investment or over investment in supply facilities such as surface storage.

Watershed Management Coordination

The goal of the CALFED Watershed Management Program is to be a partner in a comprehensive, integrated, basin-wide approach to solving the problems of the Bay-Delta ecosystem, emphasizing local participation and government cooperation at all levels. A watershed approach links the CALFED Bay Delta Program goals and objectives on a regional basis and encourages local watershed planning and management efforts. The watershed management component of CALFED has evolved into two focus areas, in recognition of physical characteristics of the Bay-Delta watershed:

- The upper tributary watershed above reservoirs and major fish passage obstructions, and,
- The lower watershed, generally below those major fish passage obstructions.

A coordinated Watershed Management Program will provide for intergovernmental, interagency and interwatershed coordination of restoration and water management efforts. In addition, it provides for a planning and implementation process which includes existing local watershed councils, Coordinated Resource Management and Planning efforts, and similar stakeholder ongoing processes.

Following are examples of watershed management projects that can make improvements in each CALFED resource area:

Ecosystem Quality – Watershed projects that improve riparian habitat along streams, increase or improve fisheries habitat and passage, restore wetlands, restore the natural stream morphology affecting downstream flows or species may benefit ecosystem quality.

Water Quality – Watershed management activities may benefit water quality in the Delta by helping to identify and control non-point sources of pollution and identify and implement methods to control or treat contaminants. Watershed projects that reduce pollutant loads in streams, lakes or reservoirs could measurably improve downstream water quality for multiple users.

Water Supply Reliability – A watershed project minimizing the soil erosion which causes the filling of downstream water storage reservoirs with sediment will help water supply reliability.



Entities receiving transferred water should be required to show they are already making efficient use of existing water supplies.

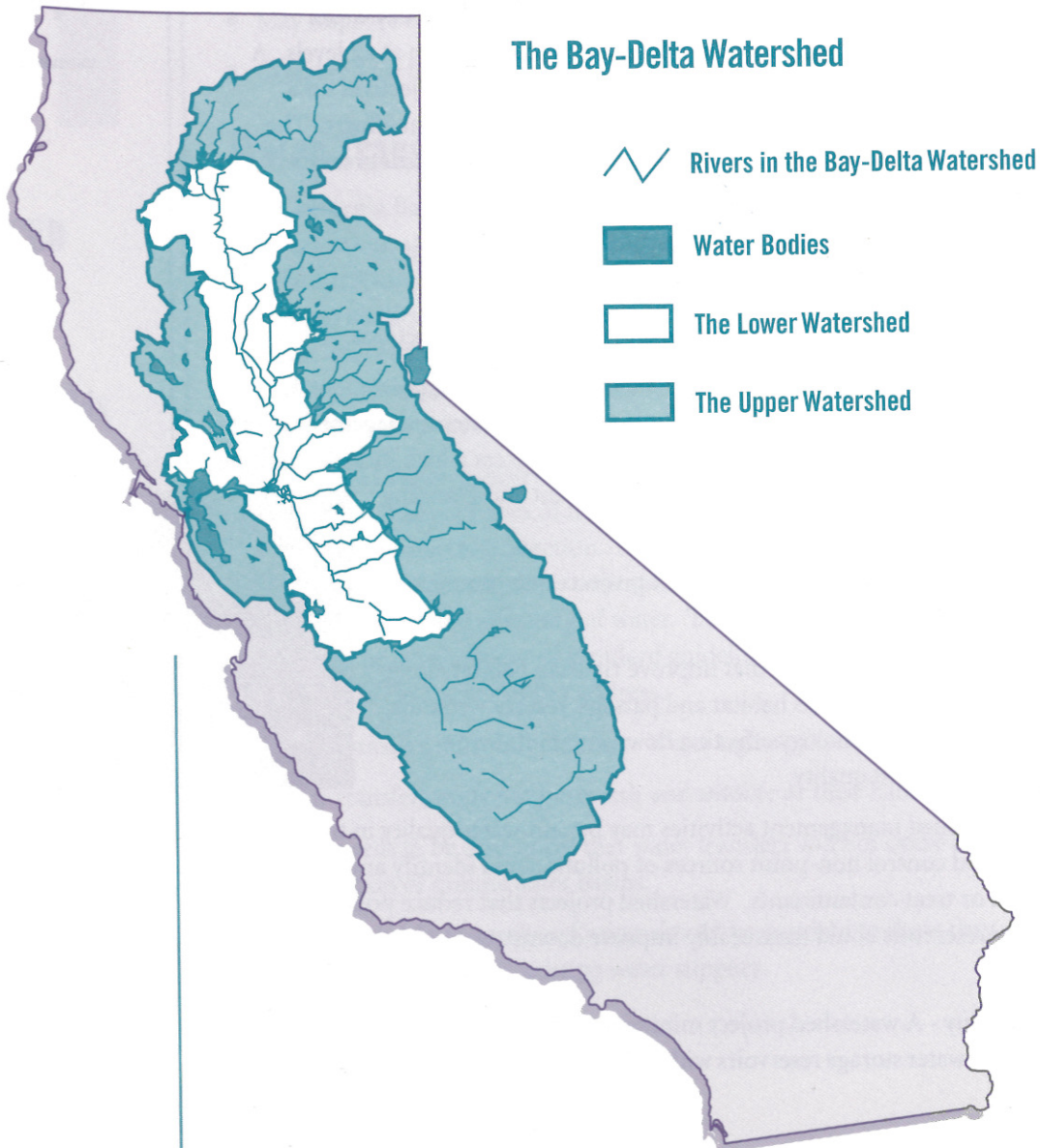
Common Program Elements

A watershed project which incorporates meadow water retention may also increase water supply reliability.

Levee and Channel Integrity - Watershed management projects may reduce the risk of levee failures by moving the timing, variability, and duration of floodplain inundation and water table elevation closer to an undisturbed condition through meadow restoration and wetland development.

How This Will Help

- Benefits ecosystem by increasing or improving fisheries habitat and passage, restoring wetlands, and restoring the natural stream morphology affecting downstream flows.
- Benefits potential sources of drinking water.
- Helps control excess flood runoff which threatens levees and decreases water supply.
- Helps to remove point and non-point pollution through remedial actions at pollution sites.
- Restores meadows and potentially enhances groundwater recharge.



Storage

Storage may or may not be included in the CALFED alternatives. Storage of water in surface reservoirs or groundwater basins can provide opportunities to improve the timing and availability of water for all uses. The benefits and impacts of surface and groundwater



storage may vary depending on the location, size, operational policies and linkage to other Program elements. CALFED has evaluated the following types of new storage:

Upstream Surface Storage – New storage upstream of the Delta could store a portion of runoff that occurs in large volumes over short periods of time in the winter and spring.

In-Delta Surface Storage – In-Delta surface storage could be developed by converting one or more Delta islands into reservoirs.

South of Delta Off-Aqueduct Storage – New, south of Delta off-aqueduct storage could be filled by diversions through the Delta Mendota canal or the California Aqueduct during periods of high flow in the Delta.

Groundwater Storage – Groundwater storage can take the form of direct groundwater banking operations or groundwater conjunctive use operations.

Variable Program Elements

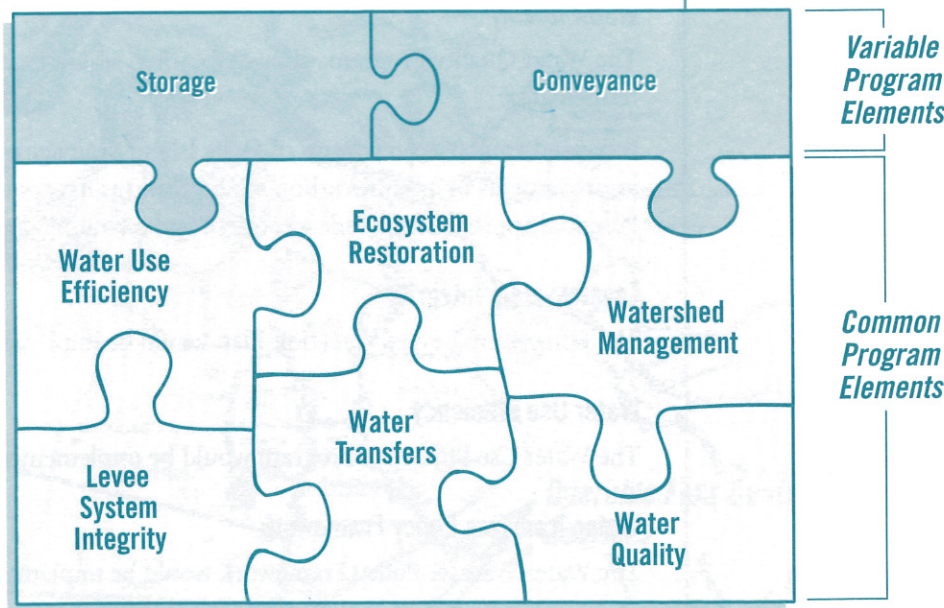
Conveyance

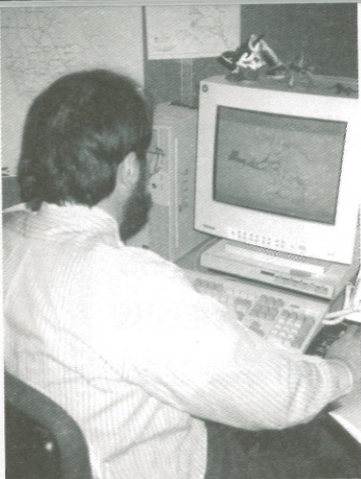
Conveyance describes various ways water can be moved through the system to the major export facilities in the southern Delta. While there are countless combinations of potential modifications to Delta channels, three primary categories of Delta configuration options are being studied in Phase II of the Program. They are:

Alternative 1: Keep existing system through the Delta.

Alternative 2: Make improvements to existing conveyance through the Delta.

Alternative 3: Make improvements to existing conveyance through the Delta and construct a new channel to take water around the east side of the Delta to export pumps south of the Delta.





Alternatives at a Glance

Following are brief descriptions of the three best alternatives, which will help CALFED move toward a preferred alternative. Each one contains the six Common Program elements. They differ primarily in how they would move and store water in the system.

Alternative 1 — Existing System Conveyance

Common Program Elements

Ecosystem Restoration

The Ecosystem Restoration Program Plan, as discussed earlier, would be implemented with the following refinements:

- Changes in environmental water flows would be met through purchase of existing water from willing sellers and use of the new storage allocated to environmental water supplies.
- Aquatic habitat restoration identified for the south Delta area would be relocated to the northern and western Delta. This change would provide intensive habitat restoration to be located prudently distant from the south Delta pumping facilities.
- Incorporate a portion of identified south Delta wildlife habitat with the setback levees along Old River.

Water Quality

The Water Quality Program, discussed earlier, would be implemented with the following refinements:

Increased emphasis on control of Delta Island drainage will be necessary to achieve improvements in organic carbon concentrations in exports water treated for drinking. Potential approaches include treatment and rerouting drainage.

Levee System Integrity

The Long-Term Levee Protection Plan would be implemented as described earlier.

Water Use Efficiency

The Water Use Efficiency Program would be implemented as described earlier.

Water Transfers Policy Framework

The Water Transfer Policy Framework would be implemented as described earlier.

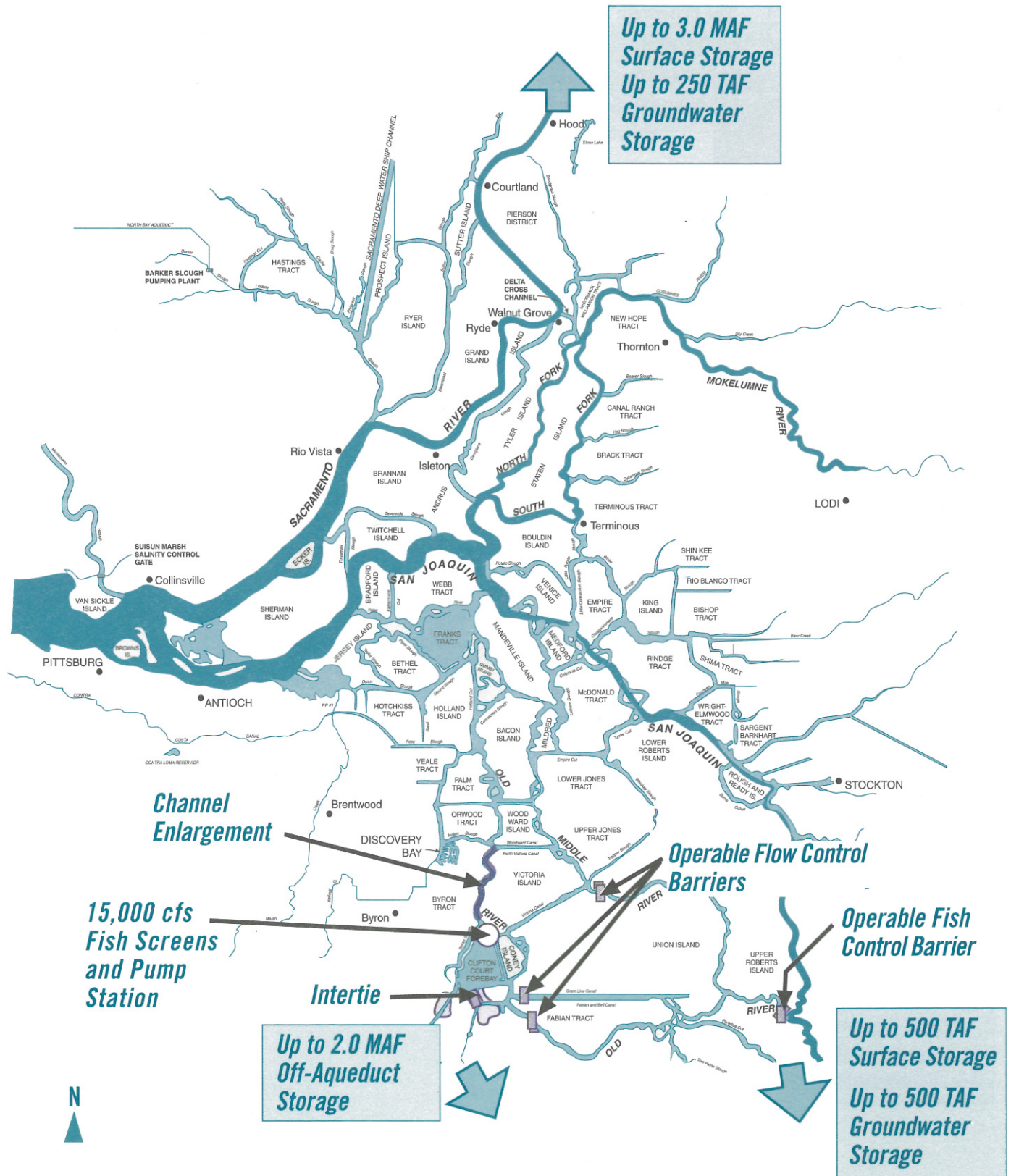
Watershed Management Coordination

The Watershed Management Coordination would be implemented as described earlier.

Alternative 1

Storage and Conveyance Features

Variable Program Elements



Alternative 2 — Modified Through Delta Conveyance

Common Program Elements

Ecosystem Restoration

The Ecosystem Restoration Program Plan would be implemented with the following refinements:



- Changes in environmental water flows would be met through purchase of existing water from willing sellers and use of the new storage allocated to environmental water supplies.
- The modification of the Mokelumne River Floodway with setback levees, conversion of Bouldin Island to aquatic habitat, and construction of the East Delta Wetlands Habitat will create about 5,000 to 10,000 acres more habitat than identified in the ERPP.
- Incorporate a portion of identified south Delta wildlife habitat with the setback levees along Old River.

Water Quality

The Water Quality Program, discussed earlier, would be implemented with the following refinements:

- Evaluate relocating the water supply intake for North Bay Aqueduct to avoid salts and organic carbon that reduce the ability to recycle water, complicate disinfection, and are sources of disinfection byproducts. Alternative 2 would not, overall, result in improvement of North Bay Aqueduct export water quality, and a change of intake location would be necessary for North Bay Aqueduct water users to benefit from the Delta solution.
- Relocate Delta island drainage discharges to channels other than those identified for conveyance modifications.

Levee System Integrity

The Long-Term Levee Protection Plan would be implemented as described earlier.

Water Use Efficiency

The Water Use Efficiency Program would be implemented as described earlier.

Water Transfers

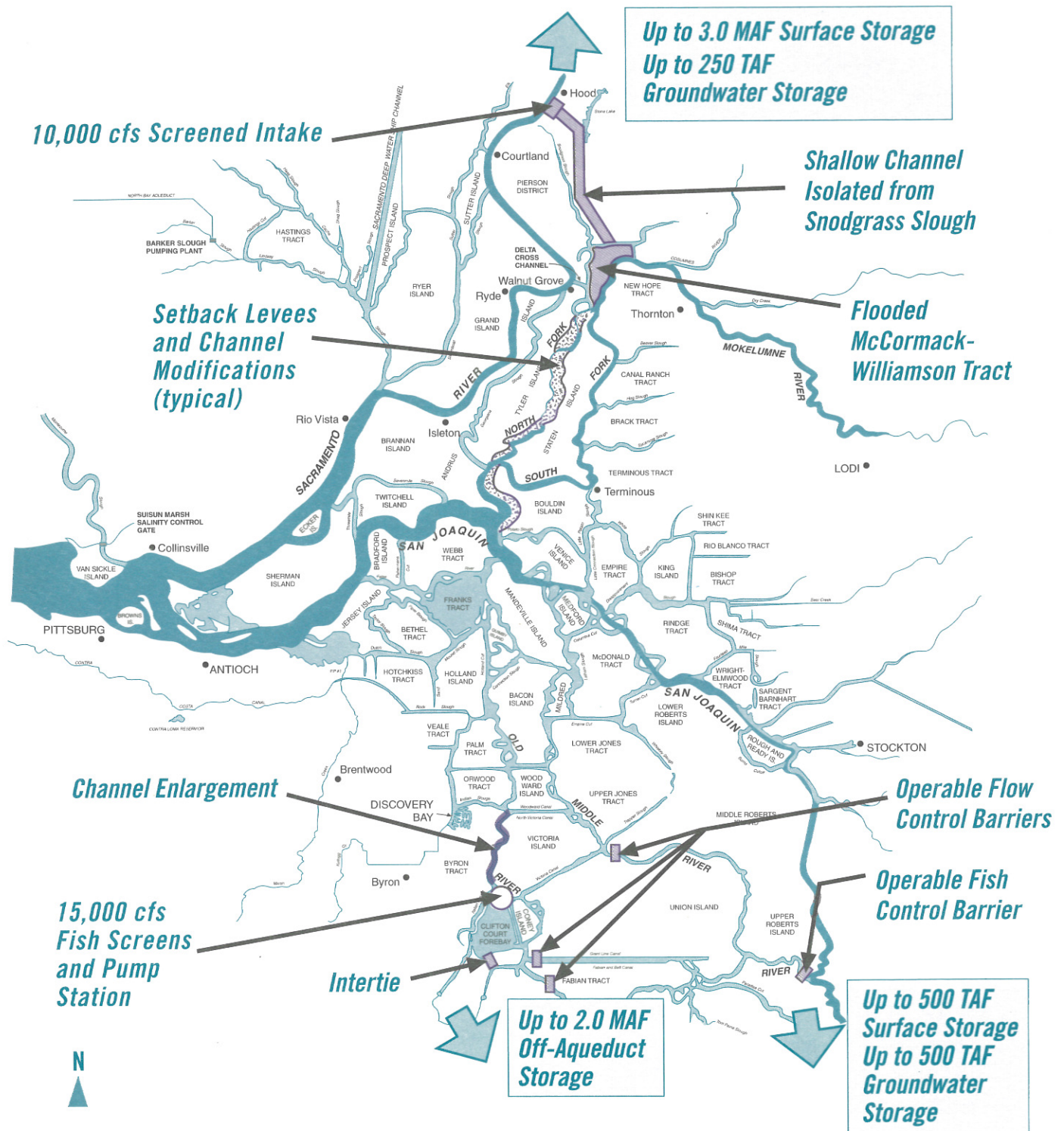
The Water Transfer Policy Framework would be implemented as described earlier.

Watershed Management Coordination

The Watershed Management Coordination would be implemented as described earlier.

Storage and Conveyance Features

Variable Program Elements



Alternative 3 — Dual Delta Conveyance Alternative

Common Program Elements

Ecosystem Restoration



The Ecosystem Restoration Program Plan would be implemented with the following refinements:

- Changes in environmental water flows would be met through purchase of existing water from willing sellers and use of the new storage allocated to environmental water supplies.
- Habitat improvements along the North Fork Mokelumne River would be limited to establishing a riparian tree corridor associated with levees possibly set back for modified channel conveyance.
- Shallow water habitat identified for the Delta would be located in the eastern Delta by breaching select portions of the east levee along the South Fork Mokelumne river and protecting interior levee slopes.

Water Quality

The Water Quality Program, discussed earlier, would be implemented with the following refinements:

- Evaluate relocating water supply intakes (such as North Bay Aqueduct, Tracy, and Contra Costa Water District intakes) to avoid salts and organic carbon that reduce the ability to recycle water and that complicate disinfection and are sources of disinfection byproducts.
- Actions to reduce contributions of organic carbon from Delta islands through treatment or drainage rerouting may be unnecessary.

Levee System Integrity

The Long-Term Levee Protection Plan would be implemented as described earlier.

Water Use Efficiency

The Water Use Efficiency Program would be implemented as described earlier.

Water Transfers

The Water Transfer Policy Framework would be implemented as described earlier.

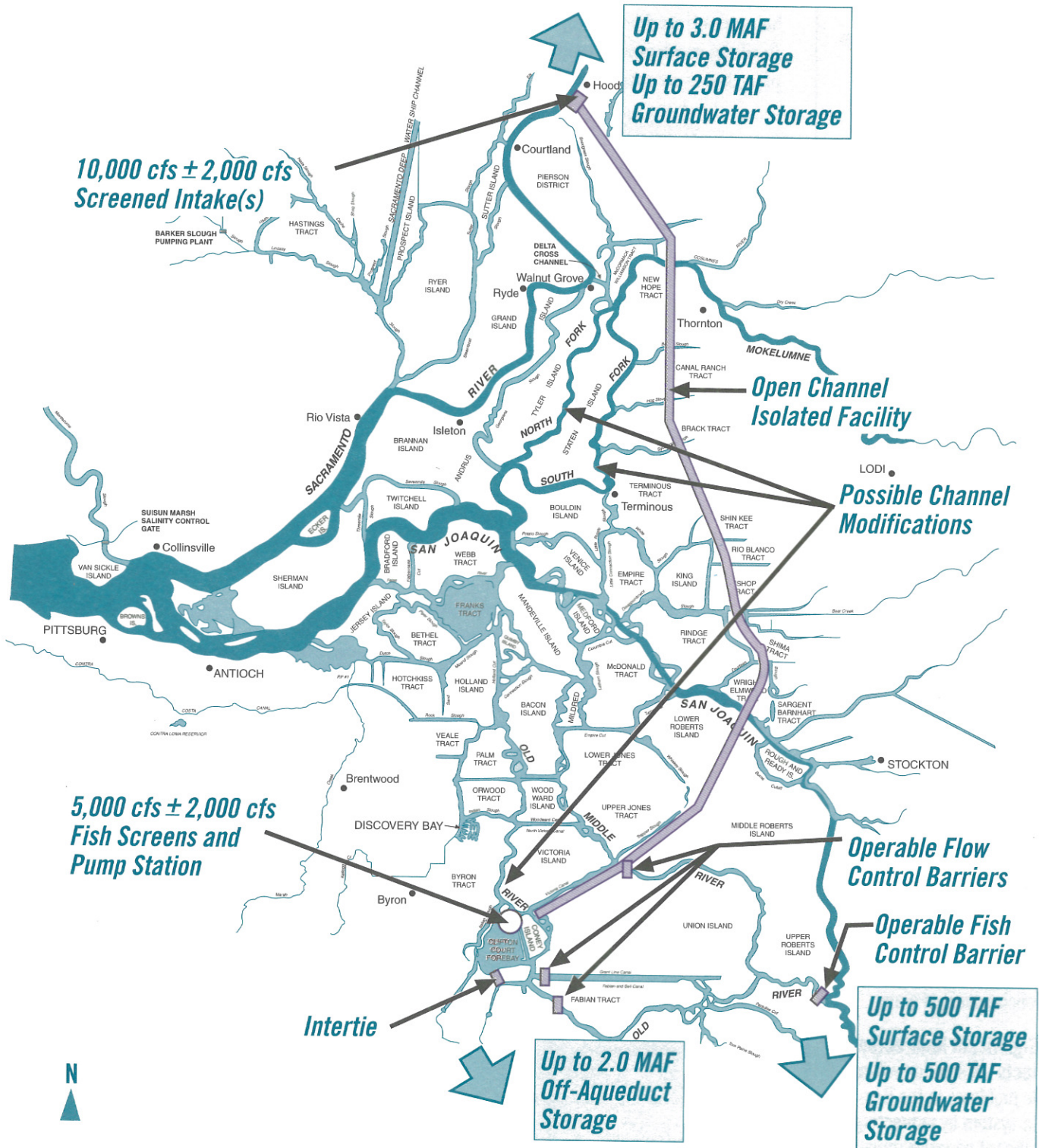
Watershed Management Coordination

The Watershed Management Coordination would be implemented as described earlier.

Alternative 3

Storage and Conveyance Features

Variable Program Elements



Solution Principles

Solution principles are fundamental principles, which guide the CALFED Bay-Delta program. The six principles that guide the development and evaluation of the Program and development of the alternatives include:

■ **Affordable** - An affordable solution will be one that can be implemented and maintained within the foreseeable resources of the CALFED Bay-Delta Program and stakeholders.

■ **Equitable** - An equitable solution will focus on resolving problems in all problem areas. Improvements for some problems will not be made without corresponding improvements for other problems.

■ **Implementable** - An implementable solution will have broad public acceptance, legal feasibility and will be timely and relatively simple compared with other alternatives.

■ **Durable** - A durable solution will have political and economic staying power and will sustain the resources it was designed to protect and enhance.

■ **Reduce Conflicts in the System** - A solution will reduce major conflicts among beneficial users of water.

■ **No Significant Redirected Impacts** - A solution will not solve problems in the Bay-Delta system by redirecting significant negative impacts, when viewed in its entirety, in the Bay-Delta or other regions of California.

Getting to a Solution

The draft programmatic EIS/EIR presents analysis on the potential benefits and impacts of the Program alternatives. This information is the result of both technical analysis and stakeholder input. CALFED is continuing to evaluate the alternatives and, with the help of the public, will select a preferred alternative in late 1998. In addition, specific work is being done on developing an implementation plan that includes adequate assurances (built-in mechanisms to ensure the solution is implemented as intended) and a financing plan that is acceptable to the public.

Commonly Asked Questions

What happens to comments?

Since the beginning, CALFED has solicited public feedback on all aspects of the Program's development, including goals, solution principles, priorities and implementation. Comments received during the public review period for the draft programmatic EIS/EIR will be grouped in categories and forwarded as they come in to the appropriate technical staff for evaluation. If necessary, technical analysis will be conducted as part of this evaluation process. Comments then will be incorporated into a final programmatic EIS/EIR, which will also be circulated for public review and comment prior to signing of the Record of Decision and Certification.

Year	1995	1996	1997	1998	1999	2030
Month	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND ►
CALFED begins	●					
Statewide public meetings held to solicit input	■					
CALFED releases drafts of 20 potential solutions		●				
Environmental review process begins		●				
Additional public meetings and technical analysis		■				
Draft programmatic EIS/EIR is released for public review				●		
Public review period. Continue technical analysis				■		
Incorporate public comments				●		
CALFED chooses a preferred alternative				●		
CALFED expects to certify EIS/EIR					●	
Solution implemented						■ ►

Want to Know More?

Environmental Review

To comply with the National Environmental Policy Act (EIS) and the California Environmental Quality Act (EIR), CALFED is preparing a programmatic Environmental Impact Statement/Environmental Impact Report.

Main Document

The main document and executive summary contain the following information:

- Definition of Program scope.
- Potential impacts of the no-action alternative.
- Potential impacts of solution alternatives, each containing Program elements for ecosystem restoration, water quality, water use efficiency, levee system integrity, water transfers and watershed management coordination, Delta conveyance and a range of storage options.
- Steps that have been and will continue to be taken to identify a preferred alternative.
- Current regulatory climate and potential land-use changes.
- Public involvement opportunities.

Appendices

Eleven appendices, including the Phase II Interim Report, expand upon the information contained in the main document.

The Phase II Interim Report is an important disclosure document. It builds on the discussion of consequences displayed in the main document revealing the comparative technical advantages and disadvantages of each alternative. It also describes how the CALFED agencies will work with elected officials, local agencies, interest groups and the public over the coming months to develop a preferred Program alternative that reduces major conflicts in the system, is equitable, affordable, durable, implementable and will not solve problems by redirecting impacts.

- *Program Goals and Objectives* – Summary of Program goals and objectives developed in Phase I of the Program.
- *No Action Alternative* – Describes the No Action Alternative, which is an estimate of future (year 2020) conditions if the Program alternatives are not implemented.
- *Program Alternatives* – Summarizes the 12 alternative configurations built around three Program alternatives.
- *Ecosystem Restoration Program Plan* – Basis of the ecosystem restoration actions included in all potential solutions.
- *Water Quality Program* – Basis of water quality actions included in all potential solutions.
- *Water Use Efficiency Program and Water Transfers* – Basis of water use efficiency actions included in all alternatives.



- *Long-Term Levee Protection Plan* – Basis of Delta levee improvements included in all potential solutions.
- *Watershed Management Coordination* – Basis of watershed management coordination actions included in all potential solutions.
- *Summary of Modeling Assumptions and Results* – Summarizes and references the many modeling reports developed during evaluations for the Programmatic EIS/EIR.
- *Implementation Strategy* – Includes financial and assurance strategies for guiding implementation of the long-term comprehensive plan.

Technical Reports

Technical supporting documents covering the following topics are also available to interested parties. These include:

- *Agricultural Resources*
- *Cultural Resources*
- *Fisheries & Aquatic Resources*
- *Flood Control Systems*
- *Geomorphology & Soils*
- *Groundwater Resources*
- *Power Production & Energy*
- *Recreational Resources*
- *Regional Economics*
- *Surface Water Resources*
- *Vegetation & Wildlife*
- *Water Quality*

Would You Like a Copy?

Website — The Executive Summary and Phase II Interim Report are available on the CALFED website at <http://calfed.ca.gov>

Toll-free Ordering — You can also call **1-800-900-3587** to request documents.

Libraries — Many libraries in California have these documents. Call CALFED at 1-800-900-3587 to find the one closest to you.

Glossary of Terms

AF: Abbreviation for acre feet; the volume of water that would cover one acre to a depth of one foot, or 325,851 gallons of water. On average, could supply 1-2 households with water for a year.

Alternative: A collection of actions or action categories assembled to provide a comprehensive solution to problems in the Bay-Delta system.

Action: A structure, operating criteria, program, regulation, policy, or restoration activity that is intended to address a problem or resolve a conflict in the Bay-Delta system.

Action Category: A set of similar actions. For example, all new or expanded off-stream storage might be placed into a single action category.

Anadromous Fish: Fish that spend a part of their life cycle in the sea and return to freshwater streams to spawn.

Best Management Practices (BMP): An urban water conservation measure that the California Urban Water Conservation Council agrees to implement among member agencies. The term is also used in reference to water quality standards.

Carriage Water: Additional flows released during export periods to ensure maintenance of water quality standards and assist with maintaining natural outflow patterns in Delta channels. For instance, a portion of transfer water released from upstream of the Delta intended for export from south Delta would be used for Delta outflow.

Central Valley Project (CVP): Federally operated water management and conveyance system that provides water agricultural, urban, and industrial users in California.

Central Valley Project Improvement Act (CVPIA): This federal legislation, signed into law on October 30, 1992, mandates major changes in the management of the federal Central Valley Project. The CVPIA puts fish and wildlife on an equal footing with agricultural, municipal, industrial, and hydropower users.

CFS: An abbreviation for cubic feet per second.

Channel Islands: Natural, unveeved land masses within Delta channels. Typically good sources of habitat.

Common Delta Pool: This concept suggests the Delta provides a common resource, including fresh water supply for all Delta water users, and all those whose actions have an impact on the Delta environment share in the obligation to restore, maintain and protect Delta resources, including water supplies, water quality, and natural habitat.

Common Program: Six programs for Water Use Efficiency, Water Quality, Levee System Integrity, Ecosystem Restoration, Watershed Management and Water Transfers that are essentially the same for each of the three Phase II Alternatives.

Component: A group of related action categories; the largest building blocks of an alternative. The components for the Phase II Alternatives include a component for Delta conveyance, a component for storage, and the four common programs.

Conjunctive Use: The operation of a groundwater basin in combination with a surface water storage and conveyance system. Water is stored in the groundwater basin for later use in place of or to supplement surface supplies. Water is stored by intentionally recharging the basin during years of above-average water supply.

Conveyance: A pipeline, canal, natural channel or other similar facility that transports water from one location to another.

Core Actions: Actions that would be included in all CALFED Bay-Delta Program alternatives. Core actions are no longer viewed as a single set of actions. Rather, these actions are now distributed between the four common programs included in each of the three Phase II Alternatives. These actions basically serve the same role as when originally formulated but are now viewed as the first phase of implementation within each of the four common programs.

Delta Islands: Islands in the Sacramento-San Joaquin Delta protected by levees. Delta Islands provide space for numerous functions including agriculture, communities, and important infrastructure such as power plants, transmission lines, pipelines, and roadways.

Demand Management: Programs that seek to reduce demand for water through conservation, rate incentives, drought rationing, and other activities.

Diversions: The action of taking water out of a river system or changing the flow of water in a system for use in another location.

Drought Management: A time when rainfall and runoff are much less than average. One method to categorize annual rainfall is as follows, with the last two categories being drought conditions: wet, above normal, below normal, dry critical.

Dual Conveyance System: A means of improving conveyance across the Bay-Delta by improving through Delta conveyance and isolating a portion of conveyance from Delta channels.

Ecosystem: A recognizable, relatively homogeneous unit that includes organisms, their environment, and all the interactions among them.

Entrainment: The process of drawing fish into diversions along with water, resulting in the loss of such fish.

ESA (Endangered Species Act): Federal and state legislation that provides protection for species that are in danger of extinction.

Glossary of Terms (cont.)

Export: Water diversion from the Delta used for purposes outside the Delta.

Fish Screens: Physical structures placed at water diversion facilities to keep fish from getting pulled into the facility and dying there.

Groundwater Banking: Storing water in the ground for use to meet demand during dry years. In-lieu Groundwater Banking Replaces groundwater used by irrigators with surface water to build up and save underground water supply for use during drought conditions.

HMP (Hazard Mitigation Plan): One of two standards referred to in the alternatives for levee flood protection. Following the flood disasters of the 1980s, HMP standards were established at 1 foot of freeboard above the 100-year flood event level.

Hydrograph: A chart or graph showing the change in flow over time for a particular stream or river.

In-Delta Storage: Water storage within the Delta by converting an existing island to a reservoir.

In-lieu Groundwater Banking: Replaces groundwater used by irrigators with surface water to build up and save underground water supply for use during drought conditions.

Inverted Siphon: A pipeline that allows water to pass beneath an obstacle in the flow path. For example, an inverted siphon could be used to allow water in a canal to pass under a Delta channel.

Isolated Conveyance Facility: A canal or pipeline that transports water between two different locations while keeping it separate from Delta water.

Land Fallowing/Retirement: Allowing previously irrigated agricultural land to temporarily lie idle or purchasing such land and allowing it to remain out of production for a variety of purposes.

MAF: An abbreviation for million acre feet.

Meander Belt: Protecting and preserving land in the vicinity of a river channel in order to allow the river to meander. Meander belts are a way to allow the development of natural habitat around a river.

Mining Drainage Remediation: Controlling or treating polluted drainage from abandoned mines.

Non-native Species: Also called introduced species or exotic species; refers to plants and animals that originated elsewhere and are brought into a new area, where they may dominate the local species or in some way negatively impact the environment for native species.

Real-Time Monitoring: Continuous observation in multiple locations of biological conditions on-site in order to adjust water management operations to protect fish species and allow optimal operation of the water supply system.

Riparian: The strip of land adjacent to a natural water course such as a river or stream. Often supports vegetation that provides the best fish habitat values when growing large enough to overhand the bank.

Riverine: Habitat within or alongside a river or channel.

Setback Levee: A constructed embankment to prevent flooding that is positioned some distance from the edge of the river or channel. Setback levees allow wildlife habitat to develop between the levee and the river or stream.

Shallow Water: Water with enough depth to allow for sunlight penetration, plant growth, and the development of small organisms that function as fish food. Serves as spawning areas for Delta smelt.

Smolt: A young salmon that has assumed the silvery color of an adult and is ready to migrate to the sea.

Solution Principles: Fundamental principles that guide the development and evaluation of Program alternatives. They provide an overall measure of acceptability of the alternatives.

South of Delta Storage: Water storage supplied with water exported south from the Delta.

State Water Project (SWP): A California state water conveyance system that pumps water from the Delta for agricultural, urban domestic, and industrial purposes.

TAF: An abbreviation for thousand acre feet, as in 125 TAF or 125,000 AF.

Take Limit: The numbers of fish allowed to be lost or entrained at a water management facility before it must limit or cease operations. The numbers are set for different species by regulations.

Terrestrial: Types of species of animal and plant wildlife that live on or grow from the land.

Water Conservation: Those practices that encourage consumers to reduce the use of water. The extent to which these practices actually create a saving in water depends on the total or basin-wide use of water.

Upstream Storage: Any water storage upstream of the Delta supplied by the Sacramento or San Joaquin Rivers or their tributaries.

Water Reclamation: Practices that capture, treat and reuse water. The wastewater is treated to meet health and safety standards depending on its intended use.

Water Transfers: Voluntary water transactions conducted under state law and in keeping with federal regulations. The agency most involved is the State Water Resources Control Board (SWRCB).

Watershed: An area that drains ultimately to a particular channel or river, usually bounded peripherally by a natural divide of some kind such as a hill, ridge, or mountain.

Important!
Public Comment Enclosed

FOLD HERE



**CALFED
BAY-DELTA
PROGRAM**

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What's at Stake

"The agreement to join in the CALFED Program is good for economic growth, good for the environment and good for California and the nation."

— *President Bill Clinton*

"California history is replete with accounts of ... water wars ... But too often they have been wars without winners. There is too much at stake for us to risk losing again."

— *Governor Pete Wilson*

"We can pay for the fix now, or we can pay later in ways too costly to be calculated: jobs, farmland, natural habitat and lifestyle."

— *Editorial, Contra Costa Times*

"Many officials and California business leaders believe the CALFED process is the last real opportunity to solve the state's most vexing water supply problem. It must not be allowed to founder in more years of conflict, regional dispute and legal confrontation. No area of the state can afford that."

— *Editorial, Los Angeles Times*

